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Easy Searching of Train Details by Railway Route Optimization System

Dr.P.DEVAKI
Head of the Department
Computer Science
Kumaraguru College of Technology
Coimbatore, India

P. MANOJ PRABHAKAR
Student
Computer Science
Kumaraguru College of Technology
Coimbatore, India

S. MOHAN KUMAR
Student
Computer Science
Kumaraguru College of Technology
Coimbatore, India

Abstract—**In today's modern world, travelling had gained a great importance as users travelling in trains have increased a lot. But they feel still not convenient in their journey as they are not satisfied with the features available in the existing system. They expect a system in such a way that they could reach the required destination in shorter period. Our system is designed as a software to make users journey in a more quicker manner. The main aim of this system is to provide users in easy search of train routes to reach the destination as quick as possible in a very clear manner respectively.**

Keywords- **Searching; Destination; Train-routes; Quicker-way;**

I. INTRODUCTION

Users needed a system of mode like railways to make their journey in a easier manner.Railway Route Optimization System is a product to serve to users who are tourists. The Main purpose of this system is to let the end users to reach the destination with in short period as early as possible by easy searching of train routes in a proper manner by proving specific constraints. This optimization system shows the shortest path of the train route from staring point to ending point, this is very use full in now a days to know the train details i.e. train Starting Point and Ending Point, Starting time and arrival time Charge for A Starting point to Ending Point. This system will be very useful in our day today life, because many of us are not an regular train passengers or we may frequently travel to a some specific places only, when we want to go to a new place we may not know the details of route to take and the cost for the travel. When there are many routes available to reach the destination, then we may be confused to choose which route is best and has shortest distance and minimum travelling time and the minimum cost. In this type of situation this system will be very useful for the users to check these details and clarify their confusions. This system will help all the train travellers for their tourist purpose or for their business purposes. Here the users can check the trains available for their destination before booking the tickets, so this helps the users to book their tickets clearly and also to make travelers more satisfied and reach the required place in a more quicker manner.

II. PROBLEM

Railway system poses a multitude of interesting optimization problem. Today, when you search for a train that runs from a specific station of yours choice to another station, either you get a list of trains between those stations or you will see a line mentioning that there is no direct train. The problem is to provide the users with the information of all those trains, in case of no direct trains, along with the stations that goes from source to non-final station and then from non- final to destination station.

III. EXISTING SYSTEM

In this system, only source and destination points are available. Searching of train routes is not convenient to all types of users. Travelling takes a lot of time in reaching the destination. Also information retrieving takes a lot of time for a single user and no constraints are available for easy search. Manual system which is available has no specific features in finding the shortest routes for users during their travel. Every path maintains a set of possible routes for reaching the required destination. No direct trains are available while specific place has to be reached. Finding routes process about million seconds of time. Information of various train details from available stations in reaching the required destination is not possible in a proper manner.

In one method, four modules were used in which the problem was only solved in a graphical manner. The modules like train, stations, routes and points provided only details about all the contents only in a simple manner as basic information could be retrieved by the users. But this could not help the users to make their journey in a more optimized manner.

Another method was proposed in which the source and destination points could be given by the user and details of train name, number, time taken and the distance to reach the place were calculated and obtained as a output respectively. This type of system only helped to know about the time travelled to reach a particular place but it processed a lot of time wastage for many users. So these all

problems needed to be overcomed by a proper optimized system that could help the users to make their journey more convenient in reaching the destination in a very short period respectively.

IV. PROPOSED SYSTEM

We have a proposed system in which easy searching of train routes is possible that suits to all kinds of users during their travel. Searching of train routes can be done in an easier way. Ticket Booking can be done easily with the available constraints. Users can save a lot of time in reaching the required place as quick as possible. Journey is made more comfortable for all users when they use this optimized route system. It can also provide users with more regular and reliable rail system by proper optimization of routes among the various stations.

We have provided two constraints in searching the train routes in a simple manner. One is by entering the number of connecting trains from various stations by using the shifts. Second is by looking at the more number of trains travelled by the users during their journey which will be very helpful in searching the best train that could be easy for users to reach the destination in a quicker way. This type of searching helps the users to know about the information of various train details from all possible stations in a proper manner.

The System is provided with the details such as source & destination points, date of journey to travel and also the timings of train details that suits to various types of users to choose their journey. It also provides searching of various train details in a more convenient manner. Moreover, this system provides the connecting train lists from various stations along with the details of cost, arrival & departure timings, source & destination timings here respectively.

Here the system also gives details about the number of trains that the maximum number of users have travelled during their journey to reach the destination in a quicker manner. This helps the users to know about the best trains that would help them to choose during their journey in a very easier way. Now the users can easily make use of this optimized system to make their travel more easier and reach the required place as quick as possible in more convenient manner respectively.

Our system provides this in a more mathematicalized optimization manner. The mathematical equation is of the form as,

$$X+T(S,D,dt,dtt)=>TL+[(IS)+(TLI)]$$

where,

X->Criteria(Number of stations covering to reach the destination)

S->Source Place.

D->Destination Place.

dt->Travel Date.

dtt->Approximate time required to reach the destination during travelling date.

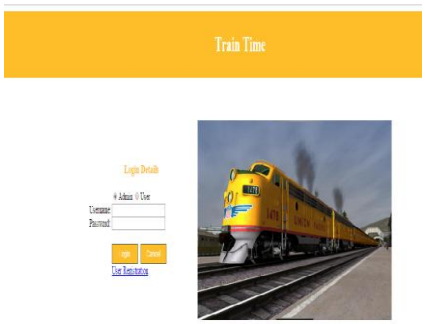
TL->Train Lists to reach the destination place from source place.

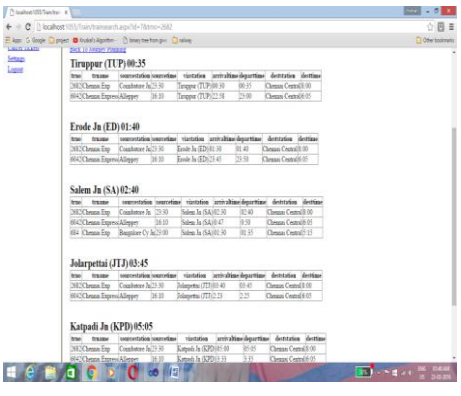
IS->List of Intermediate Stations that a train covers during travel and also the arrival timings of the train details.

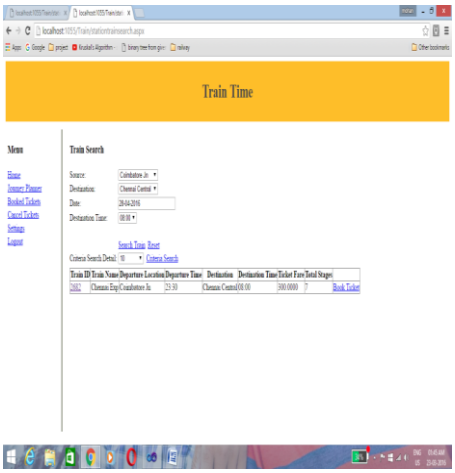
TLI->List of Other Trains reaching to the final destination from intermediate stations.

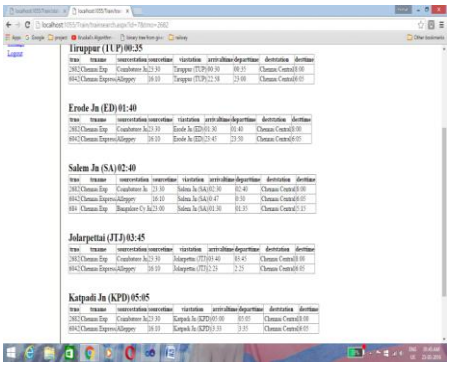
V. EXPERIMENTAL RESULTS

Here are some snapshots of our proposed system working model:









VI. RELATED WORKS

Some researchers proposed solutions for optimizing proper routes among various stations.[I] Pramod Pandey, Sunanda Dixit have proposed a optimized system in which only basic information could be retrieved by users and the users viewed the output which was depicted in a graphical manner.[II]AkshayS. Bhandari, Pratik V. Karche, Pranav D. Jadhav, Vikas. S have proposed a system in which the details of train number, name, time taken and distance to reach the place were calculated. This type of system only helped to know about the time travelled to reach a particular place but it processed a lot of time wastage for many users.

Compared with the previous works done, this paper has a proposed system in which easy searching is possible by providing with specific constraints which saves more time and travelling is made more comfortable for all kinds of users. Even more, searching of train routes in this manner make users more satisfied during their travelling time.

VII. CONCLUSION

In this paper, we have proposed a system in which users can be more comfortable and satisfied in their train travel to reach the required destination in a quicker manner. Simple aspects of optimization is described clearly in this system. It also provides users to search the train routes by constraints provided in reaching their travel zone as soon as possible. Our solution approach for routing problem may improve beneficial in future. Our current system may be now applicable but it needs to be improved a lot in order to solve further optimization problems still more in an efficient manner.

VIII. REFERENCES

[1] Pramod Pandey, Sunanda Dixit, ”Railway Route Optimization System Using Dijkstra Method”, International Journal on Recent and Innovation Trends in Computing and Communication, Volume:2, Issue:3, ISSN:2321-8169435-440, IJRITCC, March 2014.

[2] Tarak Nath Paul, Chand Mondal, ”Implementing Amalgamation of Graphs on Search of Shorter Set Paths”, International Journal of Advanced Computer Research(ISSN(print):2249-7277, ISSN(online):2277-7970)Volume-4 Number-1 Issue-14 March 2014.

[3] Lu Tong, Lei Nie, Gen-Cai Guo and Jin-mei Li, ”Study on Search of Passenger Travel Route in Railway Transport Network”The Open Cybernetics & Systemics Journal, 2015, Volume-9, 2436-2444.

[4] L. Lozano, A. L. Medagalia. ”On an exact method for the constrained shortest path problem”, Computers & Operational Research, Volume-40, PP. 378-384, 2013.

[5] Kruskal, ”On the Shortest Spanning Sub-tree of a Graph and the Travelling Salesman Problem”, jr. J. B. Proc. Amer. Math. Soc. 7, 48-50, 1956.

[6] Tarak Nath Paul, Abhoy Chand Mondal, ”Constitute a Sub-Graph with n-levels to Search a Set of Shorter Paths”, IEEE International Conference on Intelligent Computing and Intelligent System, 3-0096-10943, Volume-3, 452-456, November 2011.

[7] Martinelli R. D. , H. Teng, ”Optimization of Railway Operations Using Neural Networks”, Transportation Research Part C, Volume-4, Number-1, PP:33-49, 1995.

[8] Tarak Nath Paul, Abhoy Chand Mondal, ”Search the Set of Shorter Paths Using Graph ReductionTechnique”, International Journal of Advanced Computer Research, Volume-3, Number-4, Issue-13, December 2013.

[9] Akshay S. Bhandari, Pratik V. Karche, Pranav D. Jadhav, Vikas. S, ” Railway Route Optimization Using Genetic Method”, International Journal of Engineering and Technical Research, ISSN: 2321-0869, Volume-3, Issue-3, March 2015.

